

Remarks

The present application was filed on November 27, 2001. This is responsive to the final Office Action mailed January 11, 2005 which finally rejected claims 1-3, 7-12, 16, 23, 24 and 28-32 and objected to claims 4-6, 13-15, 17-22 and 25-27. Reconsideration and withdrawal of the final rejection is respectfully requested in view of the amendment and remarks herein. All amendments are proper, do not add new matter, do not require additional searching by the Examiner, are not narrowing in view of a bona fide prior art rejection, and place all claims in condition for allowance.

Objections to Claims

Claims 5 and 6 were objected to for informalities. The Applicant has amended claims 5 and 6 to obviate the objections and has also amended claims 9 and 10 for the same reason. Reconsideration and withdrawal of the present objections are respectfully requested.

Rejection Under 35 USC 102

Claims 1, 2, 31 and 32 were rejected under 35 USC 102(b) as being anticipated by Kim '173. This rejection is respectfully traversed.

Claim 1

Kim '173 cannot sustain a Section 102 rejection over amended claim 1 because it does not identically disclose the claimed *modulating the current, in reference to an occurrence of interference associated with an undesired air-bearing stability in an interface between a head and a surface*. (excerpt of Amended claim 1, emphasis added)

Kim '173 discloses modulating the current to the voice coil motor in relation to embedded headerless servo data. The Examiner reads the claimed "interference" as being the RRO that occurs between the head and track during track following.

The Applicant has amended claim 1 solely to more particularly point out and distinctly claim that the modulation in the embodiments of the present invention is performed in relation to the air bearing stability. The Examiner has indicated that this is patentable subject matter over the references of record by the allowability of the subject matter of claim 13. Kim '173 is silent regarding modulating the motor current in relation to the air bearing stability. Accordingly, Kim '173 cannot sustain the Section 102 rejection because it does not identically disclose all the features of the present invention as claimed in claim 1. Reconsideration and withdrawal of the present rejection of claim 1 and the claims depending therefrom are respectfully requested.

Claim 32

For the reasons stated above, claim 32 is allowable as a dependent claim of independent claim 1. Furthermore, the Applicant expressly traverses the Examiner's assertion the Kim '173 discloses that the "RRO means that the head contacts the disc or "crashes" (col. 1, ll 24-27). The portion of Kim '173 on which the Examiner relies speaks of the RRO being predictable, and therefore estimable, but does not disclose explicitly or implicitly that the RRO involves contact between the head and disc.

Rejection Under 35 USC 102

Claims 12 and 28 were rejected under 35 USC 102(c) as being anticipated by Houston '046. This rejection is respectfully traversed.

Claim 12

Claim 12 has been amended to put objected-to claim 13 in independent form.

Reconsideration and withdrawal of the present rejection are respectfully requested.

Claim 28

Houston '046 cannot sustain a Section 102 rejection over amended claim 28 because it does not identically disclose the claimed *a receiver of performance data...wherein the data includes at least one air-bearing stability performance measurement....* (excerpt of Amended claim 28, emphasis added)

Houston '046 discloses modulating the current to the spindle motor in relation to seek currents to the voice coil motor above a predetermined threshold. The Examiner reads the claimed "performance data" on Houston's determination of servo parameters and motor current.

The Applicant has amended claim 28 solely to more particularly point out and distinctly claim that the modulation in the embodiments of the present invention is performed in relation to the air-bearing stability. The Examiner has indicated that this is patentable subject matter over the references of record by the allowability of the subject matter of claim 13. Houston '046 is silent regarding modulating the motor current in relation to the air-bearing stability. Accordingly, Houston '046 cannot sustain the Section 102 rejection because it does not identically disclose all the features of the present invention as claimed in amended claim 28. Reconsideration and withdrawal of the present rejection of claim 28 and the claims depending therefrom are respectfully requested.

Rejection Under 35 USC 103

Claims 1-3, 11, 16, 23, 24, 29, and 30 were rejected as being unpatentable over Dunn '230. This rejection is respectfully traversed.

Claim 1

Dunn '230 cannot sustain a Section 103 rejection over amended claim 1 for lacking a prima facie case of obviousness, because it does not disclose or suggest the claimed *modulating the current, in reference to an occurrence of interference associated with an undesired air-bearing stability in an interface between a head and a surface.* (excerpt of Amended claim 1, emphasis added)

Dunn '230 discloses modulating the current to the voice coil motor in relation to the air drag profile which differs according to the radial location of the head. That is, the disc speed is greater toward the outer tracks of the disc as compared to the inner tracks of the disc, and the frictional engagement of the disc with the surrounding air resultingly imparts a greater local velocity to the air at the outer tracks as compared to the local velocity at the inner tracks.

The Applicant has amended claim 1 solely to more particularly point out and distinctly claim that the modulation in the embodiments of the present invention is performed in relation to the air bearing stability. The Examiner has indicated that this is patentable subject matter over the references of record by the allowability of the subject matter of claim 13. Dunn '230 is silent regarding modulating the motor current in relation to the air-bearing stability.

There is furthermore no motivation from the references to modify Dunn '230 to arrive at the embodiments of the present invention. In fact, Dunn '230 assumes a nominal

fly height across the radial extent of the actuator travel in order to construct its drag profile. Any suggestion that a skilled artisan would readily modify Dunn '230 and arrive at the embodiments of the present invention without undue experimentation ignores the fact that such modification defeats the stated purpose of the cited reference. Any such construction of claim 1 in view of Dunn '230 could only exist by improper hindsight reconstruction.

Accordingly, Dunn '230 cannot sustain a prima facie case of obviousness, at least because it does not disclose or suggest all the features of the embodiments of the present invention as claimed in claim 1, and because there is lacking any motivation to the skilled artisan to modify it to arrive at the embodiments of the present invention as claimed. Reconsideration and withdrawal of the present rejection of claim 1 and the claims depending therefrom are respectfully requested.

Claim 16

Dunn '230 cannot sustain a Section 103 rejection over amended claim 16 for lacking a prima facie case of obviousness, because it does not disclose or suggest the claimed *determining interference associated with an undesired air-bearing stability.....* (excerpt of Amended claim 16, emphasis added)

As above, Dunn '230 discloses modulating the current to the voice coil motor in relation to the differences in air velocity radially across the disc surface. The Applicant has amended claim 16 solely to more particularly point out and distinctly claim that the modulation in the embodiments of the present invention is performed in relation to the air-bearing stability. The Examiner has indicated that this is patentable subject matter over the references of record by the allowability of the subject matter of claim 13. Dunn '230 is silent regarding modulating the motor current in relation to the air-bearing stability.

Also as above, there is furthermore no motivation from the references to modify Dunn '230 to arrive at the embodiments of the present invention. Accordingly, Dunn '230 cannot sustain a prima facie case of obviousness, at least because it does not disclose or suggest all the features of the embodiments of the present invention as claimed in claim 16, and because there is lacking any motivation to the skilled artisan to modify it to arrive at the embodiments of the present invention as claimed. Reconsideration and withdrawal of the present rejection of claim 16 and the claims depending therefrom are respectfully requested.

Claim 23

Dunn '230 cannot sustain a Section 103 rejection over amended claim 23 for lacking a prima facie case of obviousness, because it does not disclose or suggest the claimed *a modulator...that avoids anomalies...thereby reducing wear on a head and the recording medium.....* (excerpt of Amended claim 23, emphasis added)

As above, Dunn '230 discloses modulating the current to the voice coil motor in relation to the air drag profile which differs according to the radial location of the head. Dunn '230 is silent regarding modulating the motor current in order prevent contacts between the head and disc, thereby reducing wear on both. The Examiner completely ignored this claimed feature in the basis for rejection.

The Applicant has amended claim 23 solely to more particularly point out and distinctly claim that the modulation in the embodiments of the present invention is performed in relation to the air-bearing stability. The Examiner has indicated that this is patentable subject matter over the references of record by the allowability of the subject matter of claim 13. Dunn '230 is silent regarding modulating the motor current in relation to the air-bearing stability to reduce wear.

Also as above, there is furthermore no motivation from the references to modify Dunn '230 to arrive at the embodiments of the present invention. Accordingly, Dunn '230 cannot sustain a prima facie case of obviousness, at least because it does not disclose or suggest all the features of the embodiments of the present invention as claimed in claim 23, and because there is lacking any motivation to the skilled artisan to modify it to arrive at the embodiments of the present invention as claimed. Reconsideration and withdrawal of the present rejection of claim 23 and the claims depending therefrom are respectfully requested.

Claim 29

Dunn '230 cannot sustain the Section 103 rejection for lacking a prima facie case of obviousness because: (1) it does not disclose or suggest the recited feature "*means operative on the processor to modulate*"; and (2) there is no motivation to modify Dunn '230 to arrive at the embodiments of the present invention.

Claim 29 is written in accordance with 35 U.S.C. §112, sixth paragraph. The Applicant has identified the function associated with the recited "means" element as being the deterministic modulating of motor current in relation to air-bearing stability. The Examiner is obliged as a matter of law to construe this means element as the disclosed structure, and equivalents thereof, that are capable of the identical function. See *B. Braun Medical, Inc. v. Abbott Lab.*, 43 USPQ2d 1896, 1900 (Fed. Cir. 1997); *In re Donaldson Co. Inc.*, 26 USPQ2d 1845 (Fed. Cir. 1994)(*en banc*); *In re Dossel*, 42 USPQ2d 1881 (Fed. Cir. 1997); *Supplemental Examination Guidelines for Determining the Applicability of 35 U.S.C. 112, Para. 6*, 65 FR 38510. Failure to do so constitutes reversible error.

Dunn '230 plainly is silent regarding any structure that is capable of modulating the motor current in relation to air-bearing stability. When this means element is properly

construed, it is clear that Dunn 230, taken as a whole, fails to disclose any structure that performs the identical function of the embodiments of the present invention as claimed. Accordingly, the rejection of claim 29 under Section 103 is erroneous as a matter of law for lack of a bona fide prima facie case of obviousness. The Applicant requests reconsideration and withdrawal of the rejection of claim 29 and the claims depending therefrom.

Rejection Under 35 USC 103

Claims 1-3, 7-10, 16, 23, and 29 were rejected as being unpatentable over Boyd '414. This rejection is respectfully traversed.

Claim 1

Boyd '414 cannot sustain a Section 103 rejection over amended claim 1 for lacking a prima facie case of obviousness, because it does not disclose or suggest the claimed *modulating the current, in reference to an occurrence of interference associated with an undesired air-bearing stability in an interface between a head and a surface.* (excerpt of Amended claim 1, emphasis added)

Boyd '414 discloses modulating the current to the voice coil motor in relation to the location of the target data in order to reduce latency. That is, the voice coil motor under certain circumstances can be slowed, thereby conserving power, without penalty to seek time.

The Applicant has amended claim 1 solely to more particularly point out and distinctly claim that the modulation in the embodiments of the present invention is performed in relation to the air bearing stability. The Examiner has indicated that this is patentable subject matter over the references of record by the allowability of the subject

matter of claim 13. Boyd '414 is silent regarding modulating the motor current in relation to the air-bearing stability.

There is furthermore no motivation from the references to modify Boyd '414 to arrive at the embodiments of the present invention. The Applicant expressly traverses the Examiner's assertion that Boyd '414 discloses "controlling the spindle motor speed when mechanical resonances occur." (pg. 7 of OA) Boyd only contemplates the mechanical difficulties associated with the location of the target data. Any suggestion that a skilled artisan would readily modify Boyd '414 and arrive at the embodiments of the present invention without undue experimentation could only exist by improper hindsight reconstruction.

Accordingly, Boyd '414 cannot sustain a prima facie case of obviousness, at least because it does not disclose or suggest all the features of the embodiments of the present invention as claimed in claim 1, and because there is lacking any motivation to the skilled artisan to modify it to arrive at the embodiments of the present invention as claimed. Reconsideration and withdrawal of the present rejection of claim 1 and the claims depending therefrom are respectfully requested.

Claim 16

Boyd '414 cannot sustain a Section 103 rejection over amended claim 16 for lacking a prima facie case of obviousness, at least because it does not disclose or suggest the claimed *determining interference associated with an undesired air-bearing stability....* (excerpt of Amended claim 16, emphasis added)

As above, Boyd '414 discloses modulating the current to the voice coil motor in relation to the location of the target data in order to reduce latency. The Applicant has

amended claim 16 solely to more particularly point out and distinctly claim that the modulation in the embodiments of the present invention is performed in relation to the air-bearing stability. The Examiner has indicated that this is patentable subject matter over the references of record by the allowability of the subject matter of claim 13. Boyd '414 is silent regarding modulating the motor current in relation to the air-bearing stability.

Also as above, there is furthermore no motivation from the references to modify Boyd '414 to arrive at the embodiments of the present invention. Accordingly, Boyd '414 cannot sustain a prima facie case of obviousness, at least because it does not disclose or suggest all the features of the embodiments of the present invention as claimed in claim 16, and because there is lacking any motivation to the skilled artisan to modify it to arrive at the embodiments of the present invention as claimed. Reconsideration and withdrawal of the present rejection of claim 16 and the claims depending therefrom are respectfully requested.

Claim 23

Boyd '414 cannot sustain a Section 103 rejection over amended claim 23 for lacking a prima facie case of obviousness, at least because it does not disclose or suggest the claimed *a modulator...that avoids anomalies...thereby reducing wear on a head and the recording medium....* (excerpt of Amended claim 23, emphasis added)

As above, Boyd '414 discloses modulating the current to the voice coil motor in relation to the location of target data in order to reduce latency. Boyd '414 is silent regarding modulating the motor current in order prevent contacts between the head and disc, thereby reducing wear on both. The Examiner completely ignored this claimed feature in the basis for rejection.

The Applicant has amended claim 23 solely to more particularly point out and

distinctly claim that the modulation in the embodiments of the present invention is performed in relation to the air-bearing stability. The Examiner has indicated that this is patentable subject matter over the references of record by the allowability of the subject matter of claim 13. Boyd '414 is silent regarding modulating the motor current in relation to the air-bearing stability to reduce wear.

Also as above, there is furthermore no motivation from the references to modify Boyd '414 to arrive at the embodiments of the present invention. Accordingly, Boyd '414 cannot sustain a prima facie case of obviousness, at least because it does not disclose or suggest all the features of the embodiments of the present invention as claimed in claim 23, and because there is lacking any motivation to the skilled artisan to modify it to arrive at the embodiments of the present invention as claimed. Reconsideration and withdrawal of the present rejection of claim 23 and the claims depending therefrom are respectfully requested.

Claim 29

Boyd '414 cannot sustain the Section 103 rejection for lacking a prima facie case of obviousness because: (1) it does not disclose or suggest the recited feature "*means operative on the processor to modulate ...*"; and (2) there is no motivation to modify Boyd '414 to arrive at the embodiments of the present invention.

Claim 29 is written in accordance with 35 U.S.C. §112, sixth paragraph. The Applicant has identified the function associated with the recited "means" element as being the deterministic modulating of motor current in relation to air-bearing stability. The Examiner is obliged as a matter of law to construe this means element as the disclosed structure, and equivalents thereof, that are capable of the identical function. See *B. Braun Medical, Inc. v. Abbott Lab.*, 43 USPQ2d 1896, 1900 (Fed. Cir. 1997); *In re Donaldson Co.*

Inc., 26 USPQ2d 1845 (Fed. Cir. 1994)(*en banc*); *In re Dossel*, 42 USPQ2d 1881 (Fed. Cir. 1997); *Supplemental Examination Guidelines for Determining the Applicability of 35 U.S.C. 112, Para. 6*, 65 FR 38510. Failure to do so constitutes reversible error.

Boyd '414 plainly is silent regarding any structure that is capable of modulating the motor current in relation to air-bearing stability. When this means element is properly construed, it is clear that Boyd '414, taken as a whole, fails to disclose any structure that performs the identical function of the embodiments of the present invention as claimed. Accordingly, the rejection of claim 29 under Section 103 is erroneous as a matter of law for lack of a bona fide prima facie case of obviousness. The Applicant requests reconsideration and withdrawal of the rejection of claim 29 and the claims depending therefrom.

Allowable Subject Matter

The Applicant gratefully acknowledges the allowability of the subject matter of dependent claims 4-6, 13-15, 17-22, and 25-27. Claim 13 has been placed in independent form by the amendment herein to claim 12. The Applicant has opted not to place the other objected-to claims in independent form because the Applicant is entitled to the broader scope of the independent claims from which they depend which are allowable for the reasons above.

Conclusion

This is a complete response to the Office Action mailed January 21, 2005. The Examiner is encouraged to contact Applicant's representative below to discuss any matter preventing all pending claims from now passing to issuance.

Respectfully submitted,

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